

REMARKS

Claims 1 and 3-21 are pending in this application. By this Amendment, claim 1 is amended, claim 2 is cancelled without disclaimer of or prejudice to the subject matter disclosed therein, and new claim 21 is added. Reconsideration in view of the above amendment and following Remarks is respectfully requested.

The Office Action rejects claims 1-7 and 12-20 under 35 U.S.C. §103(a) as being unpatentable over JP 9-86188 (Shimizu) and U.S. Patent No. 6,163,454 (Strickler). The Office Action also rejects claims 8-11 under 35 U.S.C. §103(a) as being unpatentable over Shimizu and Strickler and U.S. Patent No. 5,912,092 (Maruyama). Applicants respectfully traverse these rejections.

Specifically, neither Shimizu nor Strickler, alone or in combination, disclose or suggest a battery structure, comprising *inter alia* an upper covering member and a lower covering member wherein the upper covering member is on the air discharge side and the lower covering member is on the air introduction side; and (a) wherein an aperture area of each of the ventilating holes formed in the upper covering member is smaller than that of each of the ventilating holes formed in the lower covering member, and the number of the ventilating holes formed in the upper covering member is larger than that of the ventilating holes formed in the lower covering member (b) such that battery cells which are held by the upper covering member and the middle covering member and battery cells which are held by the middle covering member and the lower covering member are cooled uniformly, as recited in claim 1.

The Office Action acknowledges that the plurality of ventilating holes of different aperture areas is not disclosed or suggested by Shimizu (Office Action, page 3, lines 1-3), but states that that feature is believed to be inherent. However, MPEP §2112 states that the Patent Office must provide rationale or evidence tending to show inherency. Citing In re

Robertson, 169 F.3d 743, 745, 49 USPQd 1949, 150-51 (Fed. Cir. 1990), MPEP §2112 states, "[i]nherency . . . may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient." Additionally, citing Ex Parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990), §2112 states, "[i]n relying upon the theory of inherency, the Examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art" (emphasis in original).

The Office Action does not offer any such basis in fact and/or technical reasoning. It is certainly possible that Shimizu's top cover apertures are identical to the bottom cover apertures, rather than being smaller in aperture area, and the disclosure of Shimizu offers no suggestion to the contrary.

The Office Action cites Strickler as a secondary reference in the event that the "aperture area" feature is not inherent in Shimizu (which it is not, as discussed above) because Strickler teaches holes of different aperture areas. However, as discussed below, there would have been no motivation to combine Shimizu and Strickler, and even if combined, the result would not have been the claimed invention.

First, regarding the motivation to combine references, the Office Action asserts that it would have been obvious to make the combination for the purpose of reducing the load on a fan. It is true that Strickler cites fan load reduction as a reason for Strickler's disclosed aperture configuration. However, this teaching is entirely irrelevant in the context of the Shimizu structure, for the following reason. According to Strickler, a fan is inside an enclosure, and it is in this context that the load reduction occurs with the disclosed aperture configuration. In contrast, in Shimizu, there is no fan disclosed inside the battery case; the space is occupied nearly entirely by the batteries, and putting a fan inside the case would

undesirably increase the size of the case. Thus, there is no problem of increased fan load in the Shimizu apparatus.

Second, the holes with the larger aperture areas in Strickler are on the discharge side, and the holes with the smaller aperture areas are on the introduction side, which is exactly the opposite of what is recited in independent claim 1. Furthermore, as noted in the Office Action, Strickler states (page 3, lines 8-11) that "fan modules have to work harder to blow or push cooling air through relatively smaller-sized exhaust apertures". In other words, Strickler is teaching away from Applicants' invention because Strickler requires larger-sized holes on the discharge side. Accordingly, even if combined, the Shimizu and Strickler would not have resulted in the claimed invention.

Additionally, Applicants' invention provides unexpected results, as described in page 16, line 9-page 19, line 5 of Applicants' specification. Applicants' invention provides uniform cooling of batteries inside the battery case because of its specific structure. Specifically, by making the total aperture area of the discharging side ventilating holes less than that of the introducing side ventilating holes, the flow rate of cooling air on the discharging side is increased (page 16, lines 14-22). Thus, even though the upper batteries get hotter than the lower batteries due to heat rising from the lower batteries (page 16, lines 22-25), the upper batteries can be cooled at a faster rate than the lower batteries because of the increased flow rate on the discharging side (i.e., the side where the upper batteries are positioned), thus equalizing the temperature between the upper and lower batteries, because of the fact that, when the flow rate of cooling air is increased, cooling effect is increased in proportion to the square root of the flow rate (page 17, lines 5-7).

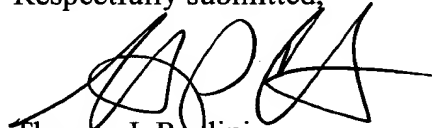
Neither Shimizu nor Strickler discloses or suggests such an effect or advantage, or even recognizes or addresses the problem of upper batteries getting hotter than lower batteries.

For any of the foregoing reasons, neither Shimizu nor Strickler, alone or in combination, discloses or suggests Applicants' invention as recited in claim 1. As such, Applicants assert that claim 1 defines patentable subject matter. Claims 3-21 depend from claim 1, and for at least this reason also define patentable subject matter. Applicants respectfully request that the rejections under 35 U.S.C. §103(a) be withdrawn.

In view of the foregoing amendments and remarks, Applicants submit that this application is in condition for allowance. Favorable reconsideration and prompt allowance of the claims are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in better condition for allowance, the Examiner is invited to contact Applicants' undersigned representative at the telephone number set forth below.

Respectfully submitted,



Thomas J. Pardini
Registration No. 30,411

Stephen P. Catlin
Registration No. 36,101

JAO:TMN/dap

Date: July 7, 2003

OLIFF & BERRIDGE, PLC
P.O. Box 19928
Alexandria, Virginia 22320
Telephone: (703) 836-6400

<p>DEPOSIT ACCOUNT USE AUTHORIZATION Please grant any extension necessary for entry; Charge any fee due to our Deposit Account No. 15-0461</p>
